Appendix H

Traffic and Transportation

This section evaluates the radiological and non-radiological impacts of onsite shipments of LLW, MLLW (including melters), TRU waste, and ILAW to treatment and disposal facilities, offsite shipments of MLLW from Hanford to offsite treatment facilities and back, and the shipment of construction and capping materials. This appendix also presents the impacts of shipments of LLW and MLLW from offsite generators to Hanford treatment and disposal facilities and shipments of TRU waste from Hanford to the Waste Isolation Pilot Plant (WIPP) for disposal. The impacts of shipments of LLW, MLLW, and TRU from offsite generators to Hanford and from Hanford to WIPP are presented for the States of Washington and Oregon. The impacts of shipments of LLW, MLLW, and TRU from offsite generators to Hanford were calculated for the States of Washington and Oregon using methods and data that are consistent with the *Waste Management Programmatic Environmental Impact Statement* (WM-PEIS, DOE 1997a). Estimated impacts of transporting TRU waste to WIPP are scaled from information presented in the *Waste Isolation Pilot Plant Disposal Phase Final Supplemental Environmental Impact Statement* (DOE 1997b).

Estimates in the environmental impact statement (EIS) of radiological and non-radiological impacts of transporting various types of waste are presented in the following sections. This analysis addresses radiological hazards of waste transported under routine and accident conditions, and chemical hazards of waste transportation accidents, as well as physical hazards (that is, fatalities) projected to occur from traffic accidents involving waste shipments. Health effects from routine vehicular emissions are also quantified. The physical (or non-radiological) hazards and the impacts of routine vehicular emissions are independent of the cargo being transported. Total integrated radiological and non-radiological impacts are calculated. Note that all of the methods used in this appendix to calculate transportation impacts are commonly used in U.S. Department of Energy (DOE) environmental documents. Potential impacts of sabotage or acts of terrorism are also addressed. Finally, the transportation impacts associated with the *Final Waste Management Programmatic Environmental Impact Statement* (WM PEIS, DOE 1997a) are compared to the transportation impacts in this EIS.

H.1 Description of Methods

The methods used in this EIS to calculate the impacts of transporting waste, construction, and capping materials are described in the following section. Section H.1.1 describes the RADTRAN 4 computer code that was used to calculate the radiological routine (or incident-free) doses and accident risks to the public and transport crews associated with the alternatives examined in the EIS. The method used to calculate physical (non-radiological) routine risks is described in Section H.1.2. The method used to calculate non-radiological accident risks is described in Section H.1.3; the method used to calculate the impacts of accidental releases of hazardous chemicals is described in Section H.1.4.